

REMARKS

In the Office Action of April 24, 2003, the Examiner noted that claims 1-15 are pending in the application, and that all claims (i.e., claims 1-15) are rejected. In addition, the Examiner has objected to claim 14, the Abstract and the Drawings. By this Amendment, claims 1, 11, 12, 14 and 15 are amended, no claims are cancelled, and new claims 16-52 are added. Thus, claims 1-52 are pending in this application. Applicant submits that no new matter has been introduced into the application. In this regard, the new claims and amendments are fully supported by the original specification and drawings at, for example, pages 60-62.

The objections and rejections are respectfully traversed below.

Objection to the Specification

In item 1 of the Office Action, the Abstract was objected to because it exceeded the 150-word limit. In response, Applicant amends the Abstract to comport with this requirement. In view of these amendments, Applicant respectfully requests withdrawal of the objection to the Abstract.

Objection to the Drawings

In item 2 of the Office Action, the Examiner objected to the Drawings for a number of informalities. In response, Applicant hereby submits formal drawing figures obviating each of the Examiner's objections. As such, Applicant respectfully requests withdrawal of the objections to the Drawings.

Claim Objections

In item 3 of the Office Action, claim 14 was objected to because of misspellings. In response, Applicant amends claim 14 to address these issues. In view of these amendments, Applicant respectfully requests withdrawal of the objection to claim 14.

Rejections Under 35 USC § 112

In item 4 of the Office Action, claims 1-10 and 12-15 were rejected as being indefinite. Specifically, the Examiner indicated that the term “substantially” rendered indefinite claims 1, 12 and 13, and the term “wherein media is modulated” rendered indefinite claims 14 and 15.

With respect to the term “wherein media is modulated,” each instance of the term has been amended to recite “wherein said data stored on said media is modulated.” Further, Applicant submits that this amendment merely clarifies without narrowing the scope of the original term. As such, Applicant submits that these claims are now clear and hence requests withdrawal of this rejection.

The rejection over the use of the term “substantially” is respectfully traversed. Specifically, the term “substantially,” when taken in conjunction with the specification, is sufficient to define the claims’ scope. In this regard, the Federal Circuit has stated that “the use of modifiers in the claim, like ‘generally’ and ‘substantial,’ does not by itself render the claims indefinite.” *Energy Absorption Sys., Inc. v. Roadway Safety Servs., Inc.*, Civ. App. 96-1264 (Fed. Cir. July 3, 1997)(unpublished) (citing *Hybritech v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1385 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987); *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 828-29 (Fed. Cir. 1984)). Instead, claims need only reasonably apprise those skilled in the art as to their scope to satisfy the definiteness requirement. *Id.* In the case at hand, the term “substantial” is used in the limitation “substantially free of the modulation,” which when taken in conjunction with the specification is sufficient to define the claims’ scope. For instance, page 61 of the specification indicates that the limitation means, for example, that “sensible audible output data” is produced. In view of the above, Applicant submits that the term is definite and hence respectfully requests withdrawal of the instant rejection.

Rejections Under 35 USC § 103

Claims 1, 3, 4 and 8-13 stand rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 5,319,735 (hereinafter Preuss) in view of EP 0745925 (hereinafter Sollish); claim 2 stands rejected under 35 USC § 103(a) as being unpatentable over Preuss and Sollish and further in view of U.S. Patent No. 6,311,305; claim 5 stands rejected under 35 USC § 103(a) as being unpatentable over Preuss and Sollish and further in view of U.S. Patent No. 5,337,357 (hereinafter Chou); claim 6 stands rejected under 35 USC § 103(a) as being unpatentable over Preuss and Sollish and further in view of U.S. Patent No. 5,745,568 (hereinafter O'Connor); claim 7 stands rejected under 35 USC § 103(a) as being unpatentable over Preuss and Sollish and further in view of U.S. Patent No. 5,958,051 (hereinafter Renaud); claim 14 stands rejected under 35 USC § 103(a) as being unpatentable over Preuss and Sollish and further in view of U.S. Patent No. 4,136,362 (hereinafter Naruse); and claim 15 stands rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 5,768,426 (hereinafter Rhoads) in view of Sollish. Thus, each of the independent claims of the present invention (claims 1 and 11-15) was rejected over a combination including either Preuss or Rhoads.

These rejections are respectfully traversed for the reasons discussed below.

The present invention is directed to a technique for authenticating data and/or a data medium in order to prevent unauthorized copying. More particularly, the invention makes use of one or more authentication keys generated using a look-up table which intentionally interferes with or alters normal output data to produced otherwise incorrect data (page 55-56). After being generated, these keys are embedded and hidden within data stored on the medium. In use, the authentication keys are identifiable by modulating the data through use of the look-up table (see, e.g., page 50). Subsequently, the keys may be used to remove modulation from the medium or, in other words, produce modulation-free or deciphered data from the medium (page 61). As such, data and/or a medium may be verified as being a legitimate copy by locating and identifying an authentication key, which may then be used to produce audio, sensible and/or

usable output. This feature (as well as other independent and optional features of the present invention) is important because without removal of the modulation of the modified modulation rule the data would not be suitable for use. Without conceding that the prior art shows or suggests any of the features of the present invention, each of the independent claims rejected by the Examiner specifically recites a combination of elements including **“outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule”** (e.g., independent claims 1, 12, and 13 and newly added independent claim 16) or **“wherein said at least one of said media and said data may be outputted in an analog and/or audio form substantially error free and free of said at least one modified modulation rule by at least one of an error removal process and said at least one authentication key or component thereof”** (e.g., independent claims 11, 14, and 15).

In contrast, Preuss discloses a technique for embedding a code signal into an audio signal to form a composite signal in a manner such that the code signal is not, for example, substantially removable from the composite signal. In particular, in Preuss, identification information describing, for example, the artist or the title of a musical selection (col. 3, line 62), is embodied by a code signal. This code signal, in turn, is embedded into an audio signal (e.g., the music or data) to form the composite signal (col. 4, line 38-41). During playback, the code signal is output with the audio signal in a manner such that it is not discernible from the audio (col. 3, lines 23-24). To keep the identification information with its associated audio data, the code is not separable from the audio signal (col. 4, lines 47-50). To allow the code signal to be removed or removable from the audio signal would defeat the purpose of the Preuss invention.

Furthermore, in item 5 of the Office Action, the Examiner indicated that, in Preuss, the step of detecting the code signal rendered obvious the step of detecting the modulation of the at least one modified modulation rule of the present invention. However, the code signal of Preuss is not modulation or a modified modulation rule. As discussed above, the code signal of Preuss

describes identification information, such as, for example, an artist's name or the title of a musical selection. As a result, it should be clear that detecting a code signal is not analogous to detecting the modulation of the at least one modified modulation rule.

Thus, without conceding that Preuss discloses or teaches any of the elements of the present invention, it is clear that Preuss does not show or suggest the combination, including **“outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule”**.

Rhoads, like Preuss, relates to embedding an identification code signal into a carrier signal in a manner such that the code signal is not removable or separable from the composite signal. Specifically, Rhoads discloses embedding an identification signal into a carrier, which may include electronic imagery, serial data, emulsion film, or paper currency (col. 1, lines 17-20). Once the signal has been embedded into the carrier, it allows the carrier to be identified. As such, it is clear that the identification code signal of Rhoads is not removable or separable from its carrier.

Also, the code signal of Rhoads is not a modified modulation rule or modulation. Similar to the situation discussed above with Preuss, the code signal of Rhoads describes identification information. As a result, it should be clear that detecting a code signal is not analogous to detecting the modulation of the at least one modified modulation rule.

Thus, without conceding that Rhoads discloses or teaches any of the elements of the present invention, it is clear that Rhoads does not show or suggest the combination, including **“outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule”**.

None of the other cited references do anything to address the above-noted deficiencies of Preuss or Rhoads in a manner that teaches or suggests the combination of features of the present invention. In particular, none of the other references of record disclose, alone or in combination, **“outputting said data as at least one of audio, video, audio data, video data and digital data**

substantially free of the modulation of the at least one modified modulation rule” or “wherein said at least one of said media and said data may be outputted in an analog and/or audio form substantially error free and free of said at least one modified modulation rule by at least one of an error removal process and said at least one authentication key or component thereof”. Sollish, for example, was cited for its teaching of deriving an embedded authentication key or component thereof. However, Sollish makes no mention of outputting data that is substantially free of a modified modulation rule or modulation after authenticating using the authentication key. Thus, it is clear that Sollish and the other cited references of record provide no disclosure or suggestion that would have motivated a person of ordinary skill in the art to modify Preuss or Rhoads, or to make any combination of the references of record in such a manner as to result in or otherwise render obvious the combination of features, as now recited by the limitations in the independent claims, when each claim is interpreted as a whole.

Accordingly, the Applicant submits that none of the references cited by the Examiner show or suggest the combination of features, as now recited by the limitations in the independent claims of the present invention.

Referring now to the claims where the specific combination of elements is asserted to be patentable over the prior art when interpreted as a whole, independent claim 1 recites a combination of features directed to a “method for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media, wherein said data stored on said media is modulated via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating at least one of said media and said data.” The method comprises the steps of “reading the data from said media” and “detecting the modulation of the at least one modified modulation rule associated with the data.” Claim 1 also recites “deriving an embedded authentication key or component thereof responsive to said detecting step” and “comparing the embedded authentication key or component thereof, to at least one authentication

key or component thereof". Claim 1 further recites "authenticating the at least one of said media and said data responsive to said comparing step" and "outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule." Accordingly, the combination of features of independent claim 1, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Claim 11 is directed to "a data disc" used in "a method for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media". The data disc comprises "media containing at least one modified modulation rule comprising at least one authentication key or component thereof for authenticating at least one of said media and said data, wherein said at least one of said media and said data may be outputted in an analog and/or audio form substantially error free and free of said at least one modified modulation rule by at least one of an error removal process and said at least one authentication key or component thereof." Accordingly, the combination of features of independent claim 11, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Claim 12 relates to a data player used "in a method for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media, wherein said data stored on said media is modulated via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating at least one of said media and said data". The data player comprises a data processor performing the steps of "reading the data from said media" and "detecting the modulation of the at least one modified modulation rule associated with the data". Claim 12 also recites "deriving an embedded authentication key or component thereof responsive to said detecting step" and "comparing the embedded authentication key or component thereof, to at least one authentication key or component

thereof". Claim 12 further recites "authenticating at least one of said media and said data responsive to said comparing step" and "outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule." Accordingly, the combination of features of independent claim 12, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Similarly, claim 13 relates to a data message used in "a method for authenticating at least one of a media and data to be stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media", which comprises "modulation via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating said data message". Claim 13 also recites "wherein the modified modulation rule cannot be readily altered, obscured nor removed from said data message without simultaneously degrading or impairing a quality of an audible component of said data message, and wherein the data message is transmitted substantially free of the modified modulation rule thereby preventing a destination processor from reading and subsequently authenticating said data message." Accordingly, the combination of features of independent claim 13, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Claim 14 is directed to a "system for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media, wherein said data stored on said media is modulated via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating at least one of said media and said data, wherein said at least one of said media and said data may be outputted in an analog and/or audio form substantially error free and free of said at least one modified modulation rule by at least one of an error removal process and said at least one authentication key or component thereof". Claim 14 recites "a data player containing a data processor comprising lookup table means for

authenticating said at least one of said media and said data and for intentionally breaking standard modulation rules by which bit patterns are recorded as one or more symbol sequences on a data media, said lookup table means connected to a focus servo, tracking servo, laser, lens and mirror, together comprising a portion of a disc reader housed in a data player device.” Accordingly, the combination of features of independent claim 14, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Claim 15 is directed to “a system for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media, wherein said data stored on said media is modulated via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating at least one of said media and said data, wherein said at least one of said media and said data may be outputted in an analog and/or audio form substantially error free and free of said at least one modified modulation rule by at least one of an error removal process and said at least one authentication key or component thereof.” Claim 15 recites “said system including a data player containing a data processor comprising a lookup table used by said data processor in intentionally modifying at least one modulation rule by which at least one bit indicative of said modifying is generated as at least one symbol used by said system to authenticate said at least one of said media and said data stored on said media.” Accordingly, the combination of features of independent claim 15, when interpreted as a whole, is submitted to patentably distinguish over the references of record.

Finally, claim 16 is directed to a “system for authenticating at least one of a media and data stored on said media, in order to prevent at least one of piracy, unauthorized access and unauthorized copying of the data stored on said media, wherein said data stored on said media is modulated via at least one modified modulation rule to generate at least one authentication key or component thereof for authenticating at least one of said media and said data”. Claim 16 recites “means for reading the data from said media” and “means for detecting the modulation of

the at least one modified modulation rule associated with the data". Claim 16 also recites "means for deriving an embedded authentication key or component thereof responsive to said means for detecting" and "means for comparing the embedded authentication key or component thereof, to at least one authentication key or component thereof". Finally, claim 16 recites "means for authenticating the at least one of said media and said data responsive to said means for comparing" and "means for outputting said data as at least one of audio, video, audio data, video data and digital data substantially free of the modulation of the at least one modified modulation rule."

In addition, the present invention provides benefits over the cited references of record. For example, once the modulation or modified modulation rule of present invention are removed, no further authorized copies may be made or played. In contrast, in Preuss or Rhoads removing an identification symbol has no effect on preventing copying or piracy. For these reasons as well, Applicant respectfully submits that the claims are patentable over the references of record.

Dependent Claims

Dependent claims 2-10 and 17-52 of the present application are further distinguishable over the references of record for their own additional features as well. For example, claims 5, 6, 20, and 21 indicate that the authenticating may occur using more than one authentication key. None of the references cited by the Examiner shows or suggests this feature in combination with the remaining features of the independent claims. Therefore, Applicant respectfully submits that dependent claims 2-10 and 17-52 of the present invention are patentable, for their own additional reasons, over the references of record.

For all of the reasons discussed above, withdrawal of the current rejections is respectfully requested.

CONCLUSION

Applicant respectfully submits that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. Applicant does not concede that the cited prior art shows any of the elements recited in the claims. However, Applicant has provided specific examples of elements in the claims that are clearly not present in the cited prior art.

Applicant strongly emphasizes that one reviewing the prosecution history should not interpret any of the examples Applicant has described herein in connection with distinguishing over the prior art as limiting to those specific features in isolation. Rather, Applicant asserts that it is the combination of elements recited in each of the claims, when each claim is interpreted as a whole, which is patentable. Applicant has emphasized certain features in the claims as clearly not present in the cited references, as discussed above. However, Applicant does not concede that other features in the claims are found in the prior art. Rather, for the sake of simplicity, Applicant is providing examples of why the claims described above are distinguishable over the cited prior art.

Applicant wishes to clarify for the record, if necessary, that the claims have been amended to expedite prosecution. Moreover, Applicant reserves the right to pursue the original subject matter recited in the present claims in a continuation application.

Any narrowing amendments made to the claims in the present Amendment are not to be construed as a surrender of any subject matter between the original claims and the present claims; rather merely Applicant's best attempt at providing one or more definitions of what the Applicant believes to be suitable patent protection. In addition, the present claims provide the intended scope of protection that Applicant is seeking for this application. Therefore, no estoppel should be presumed, and Applicant's claims are intended to include a scope of protection under the Doctrine of Equivalents.

For all the reasons advanced above, Applicant respectfully submits that the rejections have been overcome and should be withdrawn.

For all the reasons advanced above, Applicant respectfully submits that the Application is in condition for allowance, and that such action is earnestly solicited.

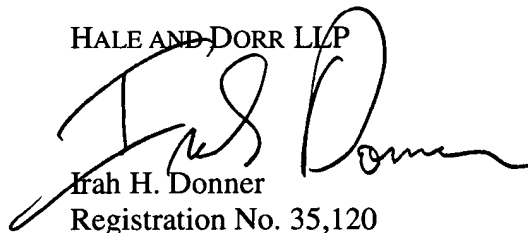
AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for this Amendment, or credit any overpayment to deposit account no. 08-0219.

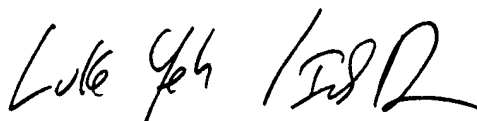
In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to deposit account no. 08-0219.

Respectfully submitted,

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